Vivek Bhavsar

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Education

University at Buffalo, SUNY
Ph.D., Computation and Data-Enabled Science and Engineering, Jan 2024.
M.S., Mechanical Engineering, Aug 2018.
Gujarat Technological University
B.E., Mechanical Engineering, Jun 2016.

Dissertation

"Two-dimensional modeling of the dynamics of non-linear flow in subduction zones"
My research utilized two-dimensional data-driven models to examine the geophysical observations as a function of varying parameters including interplate coupling and initial slab dips. I use high fidelity nonlinear models in order to understand the dynamics of asthenospheric viscosity and the evolution of slab. Models are run on UB's Center for Computational Research (CCR) cluster in parallel.

Publication

Bhavsar, V., & Jadamec, M. (2024). Dynamic variations in the zone of influence of the slab [To be submitted].
Bhavsar, V., Jadamec, M., Knepley, M. (2024). Influence of initial slab dip, inter-plate coupling, and nonlinear rheology on dynamic weakening at the lithosphere-asthenosphere boundary. Authorea Preprints.
Bhavsar, V., Jadamec, M., Knepley, M. (2022, December). Effect of Plate Coupling and Initial Slab Dip on Dynamic Weakening in the Asthenosphere. In *AGU Fall Meeting Abstracts* (Vol. 2022, pp. DI25B-0024).

Invited Talks

1. GLY-326 Structure/Global Tectonics class, University at Buffalo (Fall, 2022).
2. Geo-hazards, Volcanoes and Geodynamics (GVG) seminar, University at Buffalo (Spring, 2022)

Conferences Presentation & Travel Awards

1. Interior of the Earth, Gordon Research Conferences, Mount Holyoke College, MA (Jun, 2023).
2. [Award] Pegrum Professional Development Awards for American Geophysical Union conference, Chicago, IL (Dec, 2022).
3. [Award] SEG-AGU Geophysics of Convergent Margins, Seattle, WA (July, 2022).
4. [Award] SAGE/GAGE Community Science Workshop, Pittsburgh, PA (June, 2022).
5. American Geophysical Union conference, New Orleans, LA (Dec, 2021).

Languages, Tools, and Skills

CitcomCU, Tensorflow, PyTorch, C/C++, Python, SQL, Pandas, Numpy, Matlab, Linux BASH script, GMT (Generic mapping tools), MPI/OpenMP, PETSc, Kubernetes, Docker, AWS SageMaker, Azure
Machine learning, Numerical methods, HPC, Data Science, Cloud Computing

Teaching

Department of Computer Science and Engineering, University at buffalo
TA, Intro to Numerical Mathematics for Data Scientists, 2021
TA, Data Structure, 2018-2019

Department of Geology, University at buffalo
TA, Natural Hazards, 2019-2020

References

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